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Economic Research Digest
Quarter 3 2020

The **Economic Research Digest** monitors recently published research across a number of economic areas relevant to the work of the Department for the Economy such as competitiveness, innovation, enterprise, trade, FDI, tourism and infrastructure. The Skills Research Digest deals separately with recently published skills and labour market research.

In each case, we provide a short summary of the key points and web links to the full article or report*. A full list of sources can be found at the end of the publication.

Highlights this quarter include:

- The impact Covid-19 has had on poverty, including a projection for increased demand for food banks.
- The role that 5G technologies and blockchain play in helping economies through the current pandemic.
- Recommendations for implementing inclusive growth in Northern Ireland.
- The effect that support schemes have had on business activity in Northern Ireland, with suggestions on how to support long term recovery.

** Links are correct at the time of publication, however it is likely that some will break over time. The list of sources has more general links, which should help the reader to track down the original report.*

Contents

COMPETITIVENESS	1
PRODUCTIVITY AND GROWTH	1
LIVING STANDARDS, WELLBEING AND PROSPERITY	4
INNOVATION	9
RESEARCH AND DEVELOPMENT	9
SECTORS AND TECHNOLOGIES	10
ENTREPRENEURSHIP	11
BUSINESS GROWTH	12
GROWTH FINANCE	12
BUSINESS REGULATION	12
TRADE	12
INWARD INVESTMENT	13
TOURISM	13
ENERGY	13
TELECOMS	14
AIR ACCESS	14
NORTHERN IRELAND	14
ENGLAND	14
SCOTLAND	14
WALES	14
REPUBLIC OF IRELAND (ROI)	15
Sources	**16**

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The research summarised here presents the views of various researchers and organisations and does not represent the views or policy of the Northern Ireland Executive or those of the authors.

Economic Outcomes

COMPETITIVENESS

***The economic impacts of learning losses*, published by OECD, analyses the economic impact of school closures on students during the Covid-19 pandemic, as well as what this means for long term growth and competitiveness.**

- Roughly speaking, research in the economics of education shows that each additional year of schooling increases life income by an average of 7.5-10%. In other words, a loss of one third of a school years' worth of learning would reduce the subsequent earned income of the pupils concerned by about 3%.
- A loss of one-third of a year in effective learning for just the students affected by the closures of early 2020 will, by historical data, lower a country's GDP by an average of 1.5% over the remainder of the century. If the re-opened schools (which also involve new students) are not up to the same standard as before the pandemic, the impacts on future economic well-being will be proportionately larger.
- There is considerable anecdotal evidence that children from disadvantaged backgrounds and pupils with learning difficulties have a particularly difficult time coping with the home learning phase. Due to the very different pressures, school closures threaten to become a major burden on the equality of educational opportunities and lead to increased inequality in society.
- Immediate concrete measures need to be taken to provide effective learning for all age groups, albeit in an adapted format — from improving distance learning to developing constructive ways to re-open schools to all children and adolescents. Because school attendance will likely remain disrupted for some time to come, the serious costs of not learning must be considered and comprehensive measures must be taken to ensure that learning takes place everywhere again.

***The Environmental and Economic Impacts of the Covid-19 Crisis on the Irish Economy*, published by the Economic and Social Research Institute, analyses how the Covid-19 crisis will impact upon the Irish economy and environment.**

- This report aims to assess the economic and environmental impacts of the Covid-19 crisis on the Irish economy. The results are provided as percentage deviations from the business-as-usual (BaU) scenario, in which it is assumed that there is no pandemic (and no decline in energy prices).
- The results show that the overall economic activity in Ireland, measured by real gross domestic product (GDP), will decline by 13%, depending on the duration of restrictions.
- Decreasing tax revenues due to the economic slowdown and increasing government expenditures in the form of transfers will substantially deteriorate public balances, where the debt stock will increase by 14.2%.
- The total disposable income of all households will decrease due to the declines in both wage and capital income. The government stimulus package will play a substantially corrective role to reduce the adverse economic impacts of the crisis on disposable income of the most vulnerable household groups in urban and rural areas.
- The initial impacts of the Covid-19 crisis will increase inequality across household types.
- From an environmental perspective, the results imply that although lower energy prices will boost energy demand, the impacts of decreased energy demand due to decreased consumption and production will be larger. As a result, carbon dioxide emissions are expected to decline by 9.5% in 2020.
- From 2021, even when assuming a gradual economic recovery, low energy prices will result in increased emissions compared to BaU.

PRODUCTIVITY AND GROWTH

***Pathways to Economic Recovery after Covid-19 in Northern Ireland*, published by Ulster University Economic Policy Centre, considers a timeline for recovery for the Northern Ireland economy after the Covid-19 crisis.**

- The Ulster University Economic Policy Centre (UUEPC) estimates that it will likely take four to five years to reach pre-covid levels of economic activity and possibly more than 10 years before unemployment falls to previous lows.
- The sectors most impacted by the Covid-19 pandemic are Retail, Accommodation (Hospitality) and Arts & Entertainment and they collectively employed 220,000 people or 24% of total employment prior to lockdown.
- Given the number of jobs in these sectors, the key challenge for Government is to minimise the number of job losses. Furthermore, these sectors tend to employ a lower age demographic and people with lower levels of qualifications. Consequently, this group could find it more challenging to move into other higher skilled employment.
- In total, approximately 240,000 people in Northern Ireland were placed on furlough, but if the local labour market is broadly consistent with the UK trend, it is likely that approximately half those placed on the scheme have returned to work.
- In addition, some employers will have taken advantage of the flexible nature of the scheme and will have returned some staff on reduced hours, whilst also remaining on the Job Retention Scheme on a part-time basis.

***The Interrelationship between R&D, Innovation and Productivity: Evidence for Micro-enterprises*, published by the Enterprise Research Centre, focuses on the relationship between investment in research and development (R&D) and innovation activity, and how this relates to business growth and productivity.**

- Micro-enterprises (employing up to 9 employees) dominate the business landscape and in Northern Ireland account for almost 20 per cent of the workforce while also playing an important development role in the economy.
- The report draws on survey data of nearly 10,000 micro-enterprises in 3 countries: the UK, Ireland and the US. The analysis emphasises the importance of R&D, an investment activity that is often considered not suitable for small enterprises, in supporting the relationship between innovation and productivity.
- The main findings include:
  - Despite resource and capability constraints within micro-enterprises that curtail their ability to undertake R&D, investing in R&D has a strong and positive effect on enhancing the contribution of innovation to productivity and turnover growth.
  - The results indicate that investing in R&D activity is important not only for product/service innovation, but also for process innovation. Product/service innovation relates to a good or service that is new or significantly improved, while process innovation refers to a new or significantly improved production or delivery method.
  - R&D investment undertaken inside the enterprise is positively associated with both product innovation and process innovation, however R&D acquired externally has no significant relationship with product innovation but is positively related to process innovation.
  - In line with previous studies, the report identifies a significantly lower level of productivity for Northern Ireland micro-enterprises.

***Productivity in the ICT sector in Northern Ireland*, published by the Enterprise Research Centre, measures productivity levels in the Northern Ireland Information and Communication Technology sector.**

- Productivity is an important determinant of long-run growth in an economy, yet to-date little analysis has been undertaken at a micro-level of sectoral productivity levels in Northern Ireland. This analysis has sought to understand productivity across the firm level distribution of the ICT sector, one of the priority sectors for the economy.
- The ICT sector comprises around 2,100 firms in 2017. This represents an increase in the number of firms in this sector, from around 1,700 in 2014. Micro firms (employing between 1 and 9 employees) dominate this sector, accounting for 67.2% of all firms in the sector, an increase from 64.7% in 2014.
- Average productivity per employee was £42,800 in 2017 which represents a decrease from £47,300 in 2014. This is not surprising, given the growth in the number of micro firms in the sector. In total just over one third of firms in the sector have productivity levels of between

£20,000-£49,000. The share of firms with productivity of £100,000 or more has increased from 3 to 13 per cent between 2014 and 2017.

- Firms that import or export have higher productivity levels than those not undertaking these activities. Non-family owned firms also tend to have higher productivity levels.
- An encouraging finding from the analysis is that the proportion of firms undertaking R&D, importing and exporting have increased over the period. This is likely to contribute to improved productivity performance over the next few years.

***Inclusive Growth in Northern Ireland*, completed by the Fraser of Allander Institute on behalf of the Department for the Economy, examines the potential for embracing and monitoring inclusive growth in Northern Ireland.**

- There is no concrete understanding of the relationship between inequality and economic growth. Theory would suggest that if growth is higher, then more people will have the opportunities to enjoy this, but the evidence suggests that this is not adequately leading to shared prosperity.
- There also exists a very limited evidence base of inclusive growth policy measures in practice and their success, meaning it is difficult to determine the effects of any inclusive growth orientated policy. Secondly, how other countries define inclusive growth and conduct their approach varies across the world. This means that inclusive growth is not a 'one-size-fits-all' process, and instead must be specific to the country or region that is seeking to achieve. That involves agreeing on what inclusive growth means, and secondly how you think that is best achieved.
- At its very core, inclusive growth should be about identifying who the excluded groups in an economy are, and then finding ways to include them. Most agree that this does not simply involve distributing the benefits of higher economic growth once it has been achieved but ensuring that everyone in the economy is included in economic growth and benefits directly.
- Northern Ireland does face a number of prominent challenges over the coming years. Creating an inclusive programme in a country with a legacy of community division; as well as facing the world issues of the coronavirus pandemic, climate change and the risks of automation, will provide obstacles for any inclusive growth agenda, and therefore must be considered in any inclusive growth decision making process.

***What drives productivity growth behind the frontier? A mixed methods investigation into UK SMEs*, published by the Enterprise Research Centre, examines whether firms that are deemed the most productive actually experience future productivity growth.**

- Contrary to previous findings which show that the most productive firms in the economy-frontier grow faster than other firms, the report finds no consistent relationship between firms' initial productivity level and subsequent productivity growth for SMEs who typically operate 'behind the frontier'.
- Thus, while previous evidence suggests that large productive firms are also the fastest growing firms, the analysis reveals that for SMEs, growth is unrelated to previous productivity levels, and this finding is robust across twelve manufacturing and service sectors. Moreover, they find no strong relationship between growth and the size of the firm, its age, its number of subsidiaries or its fixed investments.
- Qualitative analysis suggests a number of factors which characterise high performing SMEs: inspirational leadership, people management, data-driven operational management processes, strategic investments, and product, market and tactical innovation. Few of these factors are sector specific, although there are variations in how they are implemented. None operates in isolation.
- The findings have implications for the targeting of SME policy interventions which may be particularly important as we seek to rebuild strength after the Covid-19 crisis. The analysis suggests that observable firm characteristics are only weakly linked to subsequent productivity growth, so targeted policy interventions based on firm size, age, subsidiaries or investments are likely to be inefficient.
- Policy interventions should be based on the idea that SMEs, irrespective of previous productivity, can achieve high growth if they have focused and effective leadership, if they have appropriate human resource management practices, if they are innovative and if operational management is data driven. This has implications both for the targeting of policy support and the need to support SME owner-managers with the skills they need to be effective leaders of transformational change.

This, in turn, should lead SMEs to adopt positive practices to manage their people, and introduce practices that are conducive to innovation.

LIVING STANDARDS, WELLBEING AND PROSPERITY

***Fiscal Powers in Northern Ireland: A New Settlement*, published by the Nevin Economic Research Institute, argues that the current devolution in Northern Ireland "incentivises poor expenditure decisions", emphasising that a needs-based system should be adopted.**

- In NI the devolution of spending powers was intended to provide a locally elected government with the capacity to make policy decisions that will benefit the regional economy. However, with almost no exposure to the consequences of those decisions in the form of tax revenue, it is unclear whether NI's devolution settlement can live up to the expectations that have been set for it.
- Devolving revenue raising to NI could allow the Executive to adopt more interventionist policies and assume greater responsibility for economic growth in NI, but the process must acknowledge the dangers of doing so in a piecemeal fashion. Having exposure to revenue streams can be beneficial, but varying rates can lead to significant volatility. Having exposure to a fraction of all revenues is preferable to having total exposure to some. However, even if this level of fiscal devolution could be agreed, it would not solve many of the issues related to public expenditure in NI.
- A needs-based approach to regional funding has been long argued for and its case would only be strengthened with greater fiscal devolution. Simply put, the needs-based approach acknowledges that regions face different costs in providing public services and some of these are structural differences that cannot be overcome by reform or greater efficiencies. Regions can also face issues such as a disproportionately large population of over 65 or a higher than average school age population which would necessitate a larger per capita spend on public services or transfers.
- A fiscal equalisation settlement in the UK would see the devolution of up to 50% of all taxes for Northern Ireland. This would ensure that NI is not overly exposed to volatility in any one source of revenue. Some form of fiscal equalisation council, possibly modelled on the Office for Budget Responsibility in the UK, should be charged with devising the revenue and cost equalisation criteria to be applied to each region. Once taxation has been collected in NI, this body would then make an adjustment to NI's funding based on the extent to which NI's revenue raising capacity falls short of that of other areas of the UK.

***Measuring Poverty 2020*, published by the Legatum Institute, uses the most recent data available to provide a detailed overview of the extent and nature of poverty in the UK.**

- The report shows that, although the poverty rate in the UK has remained largely unchanged over the last 20 years, there has been a significant increase in the proportion of people living in deep poverty. Deep poverty is defined as those that live more than 50% below the poverty line.
- It is those in deep poverty who are being most significantly impacted by the coronavirus. The pandemic has negatively impacted on the employment situation of 65% of those who were employed prior to the Covid-19 crisis and in deep poverty, compared to 35% of those who were employed and more than 20% above the poverty line prior to the crisis.
- Before the coronavirus pandemic struck, there were 4.5 million people (7% of the UK population) living in deep poverty, up from 2.8 million (5% of the population) two decades ago. This is in contrast to the overall rate of poverty, which has changed relatively little over the same period.
- The report also shows that families in poverty where the adults work full time are less likely to experience deep poverty. Nearly one in five (19%) of those in poverty in full-time work families are in deep poverty, compared to over four in ten (43%) of those in poverty in part-time work families and half (50%) of those in poverty in workless families.
- Overall poverty rates in England, Northern Ireland and Wales have broadly followed the overall trends in the UK poverty rate; falling slowly in the early 2000s, rising during the financial crisis and recession and then falling post-recession. Northern Ireland has seen the largest reductions in poverty rates post-financial crisis (from 27% in 2011/12 to 21% in 2018/19).

***Poverty and Covid-19*, published by the Social Metrics Commission from the Legatum Institute, analyses the social and economic impact Covid-19 has had on those in poverty in the UK.**

- Some groups with already very high poverty rates have been impacted more by the crisis. For example, those from Black and Asian ethnicities have been more likely to be negatively impacted (by 4 and 6 percentage points respectively) than those from White ethnic groups.
- When asked about how they see the future for themselves, although more than half (58%) of those in poverty believe that they will be "okay", a third (28%) say that they "fear for their future". Nearly one in three people (32%) in deep poverty say they "fear for their future". The figure amongst those more than 20% above the poverty line is 21%.
- Overall, those in the deepest form of poverty (more than 50% below the poverty line) are most likely to feel that society has been made worse by the crisis. More than one in three (34%) of this group believe this to be the case, compared to 28% of the other groups. In contrast, one in four (25%) of those not in poverty say that the crisis has made them feel better about society, compared to 18% of those more than 50% below the poverty line.
- People in poverty are more likely to report being lonely than those who are above the poverty line. Some 22% of those in the deepest form of poverty (more than 50% below the poverty line) say that the Covid-19 pandemic has not changed their experience of loneliness, as they were already lonely before the pandemic. This compares to 12% of those who are more than 20% above the poverty line.
- The report finds that the economic impacts of the Covid-19 pandemic are most heavily impacting those who were already in poverty prior to the crisis, including those from Black and Minority Ethnic families, disabled people, those with low qualifications, in low-skilled sectors and in part-time work. For these groups, the likelihood is that, despite the significant support provided by the Government through the course of the crisis, their experience of poverty is likely to have deepened.

***Child Poverty in Ireland and the Pandemic Recession*, published by the Economic and Social Research Institute, analyses the impact of Covid-19 related job losses alongside emergency income support measures on child income poverty in 2020.**

- The recent surge of unemployment to unprecedented levels due to the Covid-19 pandemic naturally leads to concerns about poverty levels, particularly among children as policy measures to date have not specifically targeted children.
- The report estimates the impact of large-scale employment losses and countervailing emergency income-support measures on income poverty rates.
- In the absence of an economic recovery, child income poverty rates will increase substantially, by at least 2.9 percentage points and at most 6 percentage points relative to the No Pandemic Baseline.
- Once a partial economic recovery is accounted for, the combination of emergency income-support measures and a return to work means that child income poverty rates rise only moderately – by at least 0.2 percentage points and at most 2.4 percentage points.
- Policymakers should bear in mind that children now falling below the income poverty line in both scenarios tend to live in households that experienced large income losses because of employment losses. Policies which increase the child-dependent components of social welfare schemes or universal increases to child benefit would help to combat these income losses.
- The experience of the 2008 recession showed that non-financial measures of well-being and living standards such as the basic deprivation rate also highlight the hardship that households were facing. Policymakers should be aware that non-financial measures of well-being and living standards can further demonstrate the hardship brought about by changing economic circumstances, financial stress and a changing composition of household income.

***Progressing Sustainability in the Context of Covid-19: Grasping the Opportunity*, published by the National Economic and Social Council, discusses how Covid-19 provides the opportunity for Ireland to develop new policies that are environmentally, socially, and economically beneficial.**

- Covid-19 has shown that it is possible to change and to change radically; it resulted in a critical economic stop and a virtual cessation in the movement of people. The status quo or business as usual which seemed so inimical to change and so detrimental to climate and environment, was disrupted.
- While measures taken to protect lives have also limited economic activity and therefore reduced carbon emissions, this is likely to be temporary without policy intervention. Global warming is

unrelenting in its progress to a hotter planet and despite an expected 8 per cent reduction in emissions globally in 2020. The rebound from our economies could see emission levels catch up quickly to previous levels.

- This crisis and climate change each represent a global catastrophe that will require unprecedented global coordination where economic considerations become of secondary importance to existential ones. This may revitalise the conference of the parties (COP) and UN efforts on climate action or may lead to new approaches. However it is important to recognise that transitioning to a low carbon and digital economy and society is neither solely a technical or economic challenge but a deeply social one, now more than ever.
- Four approaches to building sustainability:
    - Supportive Sustainability and Wellbeing Frameworks - A more comprehensive and holistic way of thinking could be applied to improve government and business decision-making through policy balancing frameworks for sustainability.
    - Green Investment and Conditionality - A sustainable proactive and fair response from the State could be supported by attaching conditions to rescue measures that provide developmental outcomes for the public good.
    - Sustainability: Building Resilience in Cities, Communities and Governance - Cities can gain enormously from international networks which bring peer learning, underpinned by private and public funds, including the Rockefeller Foundation, the World Economic Forum and the World Bank.
    - Applying a Just Transition Approach in Practice - A central strategy to deliver sustainable development will be a focus on a fair and just process and outcome with managing change and uncertainty.

***The Living Standards Audit 2020*, published by Resolution Foundation, highlights recent trends in household incomes.**

- The last few years have been particularly weak for low-income households, whose typical income actually fell in 2016-17 to 2018-19, and was no higher in 2018-19 than in 2001-02. This weakness, driven by a combination of high inflation post-referendum and the roll-out of cuts to working-age welfare, is an important backdrop to the current crisis.
- The 2020s started off on a high, with the UK experiencing record employment levels and real pay growth. But, the coronavirus lockdown has hit living standards hard. It is estimated that typical non-pensioner household incomes were 4.5 per cent lower in May 2020 than in 2019-20.
- The labour market impact of the crisis has fallen most heavily on low earners, but the £9 billion boost to welfare announced in March 2020, combined with the fact that many adults in low-income households do not do paid work, means that incomes in the bottom fifth of the non-pensioner distribution were close to unchanged in lockdown compared to 2019-20. The authors estimate that without the increased welfare boost they might have been at least 8 per cent lower in May 2020.
- For many low-income families, the crisis has been accompanied by falling savings rates and a growing use of high-cost consumer debt, with one-in-four adults in the second poorest fifth of the income distribution reporting increased use of consumer debt.
- Given the immediate prospects for unemployment and household incomes, as well as the UK's pre-crisis inequalities, it is of great concern that benefit support is set to be substantially reduced in April 2021. The planned return to pre-crisis levels of support in April will reduce disposable incomes by over £1,000 a year for over 6 million households, containing 18 million people; reducing the average income of the poorer half of the population by an estimated 4 per cent in 2021-22.

***Projection of demand for Trussell Trust food banks due to the Covid-19 crisis: Quarterly at the UK (national) level*, published by the National Institute for Economic and Social Research, projects the rise in demand for food banks as a result of the Covid-19 pandemic.**

- The headline projection is 42,000 additional adults in need of food bank use in 2020 Q1, rising to some 165,000 in 2020 Q2, further to 225,000 and 417,000 in 2020 Q3 and 2020 Q4, before declining sharply to about 220,000 in 2021 Q1.
- In terms of food parcels, this approximately translates to 22 per cent higher demand in 2020 Q1 and 85 per cent higher demand in 2020 Q2, both relative to the corresponding quarters of 2019. Projected demand in 2020 Q4 is about 2.5 times that in 2019 Q4. There was 15 percent higher

food bank demand in 2020 Q1 relative to the counterfactual situation without COVID, with demand rising to 115 per cent above the non-COVID case by 2020 Q4.

- Increased demand in 2020 Q1 arose largely from loss of income for those employed and self-employed in businesses lacking government support. Self-employed workers constitute the bulk of the demand in 2020 Q2, while demand from the unemployed becomes prominent in subsequent quarters as unemployment continues to grow.
- The projected numbers of additional need for food parcels are extremely high even when the new macroeconomic forecasts are applied. Based on the modelling of the counterfactual non-COVID demand for Trussell Trust food parcels, the likely scenario implies 554,115 parcels in 2020 Q1 with the pessimistic scenario projection of 563,280 parcels demanded from Trussell Trust food banks. The demand rises progressively and reaches 1,324,575 parcels in 2020 Q4 with the worst case scenario of 1,432,801 parcels in need. This represents substantial excess demand over the non-COVID counterfactual.
- Policies to mitigate against these adverse impacts are the order of the day. The UK Government's measures are useful, but they offset only a small proportion of the adverse impacts. Beyond the Furlough scheme and assistance to small businesses, and beyond the recent changes to Universal Credit, the government must also continue to provide enhanced welfare support to the vulnerable.

***All together now? The impacts of the Government's coronavirus income support schemes across the age distribution*, published by the Resolution Foundation, examines the impact of the UK government's coronavirus income support scheme across the age distribution.**

- Those in their early 20s are most likely to have been furloughed on the job retention scheme (JRS), with a fifth of all employees on the JRS under the age of 25. But JRS spending has been more evenly distributed across different age groups, as younger workers tend to earn less. JRS spend per employee is highest for those aged 47, where the average cost is £1,400 per month compared to less than £1,000 per month for those aged under 25.
- The beneficiaries of the temporary boost to UC and Working Tax Credits (WTC), along with the permanent increase in the Local Housing Allowance (LHA), are most common among those in their early 30s. Over a million people in this age cohort, who are most likely to be working parents with young children, have received extra support.
- Older workers are the most likely to have received support via the SEISS, with recipients most likely to be found among those aged 50 to 55. Around 680,000 workers aged 45-54 made a claim, with payments totalling almost £2 billion, compared to just over 600,000 claims across all workers aged 35 and under totalling just £1.6 billion.
- The cost of the programmes was initially fairly evenly spread across those aged 25 to 55. This is because the profile of spending is dominated by the JRS, by far the most expensive programme. Spending on the JRS is more evenly distributed across different age groups than are its recipients, because younger furloughed workers tend to earn less.

***Catching Up or Falling Behind? Geographical Inequalities in the UK and how they have Changed in Recent Years*, published by Institute for Fiscal Studies, analyses regional inequalities in the UK and how they have changed over time.**

- The Covid-19 crisis has brought to the fore increasing concerns about inequalities not only between different population groups – such as the gap between the rich and poor, young and old, and different ethnic groups – but also between people living in different places. Even prior to the crisis though, there was a sense that the UK is not only a highly geographically unequal country, but is becoming an increasingly more geographically unequal one.
- Focusing on productivity, earnings and household incomes, this report finds that:
  - Geographical inequality in incomes is much lower after accounting for variation in housing costs. The picture for household incomes depends on whether they are measured before housing costs (BHC) or after housing costs (AHC). Measured BHC, median household income in London is around 14% higher than the UK average, but measured AHC it is only 1% higher.
  - Regional inequality is not increasing for incomes, but it is for wealth.
  - Inequalities between local authorities within regions are even larger than inequalities between regions, and this is especially true in the south of England.
  - Former industrial towns in the North and Midlands and coastal towns have not been falling further behind – but are poorer.

- It will also be important to monitor the evolving impact of the Covid-19 crisis on geographical inequalities. Differences in economic structures and reliance on different modes of transport mean differing degrees of exposure to the economic effects of the acute phase of the crisis.
- Thus, as the government seeks to turn 'levelling up' from a soundbite into actionable policy, it will have to carefully consider how to respond to the evolving impacts of Covid-19, as well as pay heed to the pre-existing differences in the challenges facing different parts of the country.

***UK Interregional Inequality in a Historical and International Comparative Context*, published by the National Institute of Economic and Social Research, explores the nature and scale of inter-regional and inter-urban inequalities in the UK.**

- The paper considers the UK-specific experience of the relationship between interregional inequality and economic growth in the light of international comparisons using over a century of evidence and also in much more detail over the two decades since the new Millennium.
- The report concludes that there are four main intertwined features about the links between economic development and interregional inequality, which have become clearer over the past two decades and which are especially pertinent to UK-wide discussions:
    - In terms of the relationship between governance devolution and national economic growth, neither extreme fiscal decentralisation nor extreme fiscal centralisation are advantageous for national economic growth;
    - Sub-national decentralisation and alignment between local revenue-generation and expenditure also appears to generate greater returns to public investments due to the pressure for having better-designed local economic development policies;
    - The challenge of moving towards greater sub-national devolution from a position of extreme interregional inequality is very real and is fraught with difficulties because devolution also requires strong fiscal support for weaker places;
    - Close to half of the UK population lives in medium to large sized cities and while UK interregional inequalities are amongst the highest in the industrialised world, approximately half of these overall spatial inequalities are accounted for by interregional inequalities.
- The implication of these four observations, allied with the evidence presented in the paper, is that the UK economy as a whole has suffered from regional inequalities and the UK's governance structure has almost certainly contributed to the problem.

***A Stronger Scottish Lifeline in the Economic Storm*, published by Joseph Rowntree Foundation, considers actions needed to prevent and reduce poverty in Scotland as the country emerges from lockdown.**

- In Scotland, an economic recovery plan is emerging and the groundwork for social renewal is underway. Government, employers and housing providers will need to build security where it was lacking.
- At the same time, a mobilized public is acutely aware of the reliance on care workers, shop workers, delivery drivers and those who keep Scotland's health services going. With the surge in claims for Universal Credit, it is clearer than ever that social security is also an essential public service with a vital part to play in helping to weather the economic storm that lies ahead.
- The report explores the financial pressures affecting people in Scotland. It identifies priority issues for the Scottish Parliament to address when the next Programme for Government is announced to ensure families can stay afloat. The recommendations from the report include:
    - A jobs lifeline: The Scottish Government should work with employers to create good jobs by boosting the long-term supply of affordable homes and the quality of care work. Employment programmes for low-income parents and disabled people should be scaled up to help meet interim child poverty targets by 2023-24.
    - A housing lifeline: The Scottish Government should act quickly to avoid a potential autumn spike in evictions. Legal protections should be extended until September 2021 and pre-action measures put in place to ensure genuinely affordable repayment plans are made. Government should prepare to step in where tenants are independently assessed as being unable to pay.
    - An income lifeline: Further action is needed to stabilise family incomes between schools returning in August and the delayed start of the Scottish Child Payment. The Scottish

Government should bring forward feasible options to pay £10 per week to each eligible child for a six-month period to help families pull through the economic storm.

Innovation and Enterprise

INNOVATION

***Network Effects: The innovation multipliers of international collaboration for cities and subnational governments*, published by Nesta, reviews the innovation benefits for cities and subnational governments of international collaboration.**

- There are considerable opportunities for boosting innovation through more effective international collaboration at a subnational government (SNG) level - particularly in the COVID-19 era. In recent decades, subnational international collaboration networks have become more widespread, more complex and have utilised a wider range of collaboration mechanisms.
- Picking the right international collaboration opportunity to ensure the maximum benefit to an SNG's innovation capability requires a clear understanding of the fast-moving landscape, as well as the choices and opportunity costs, and the future value proposition.
- The opportunity for international collaboration isn't just for major cities, there are effective ways of participating for second and third tier cities as well as regions and devolved nations too.
- SNGs should take a 'whole of place' approach to international engagement, by:
  - Understanding their existing international commitments, and regularly reassessing their value and objectives.
  - Taking a more integrated approach that looks beyond political boundaries, siloes and timescales.
  - Avoiding treating different collaboration networks as optional or interchangeable.
- SNGs should concentrate on collaborations that are innovation-ready, by:
  - Ensuring credible leadership and expert facilitation to negotiate international differences and tease out innovation potential.
  - Setting clear shared objectives, commitments and responsibilities.
  - Creating the profile and appetite to engage a wider stakeholder base, including citizens, business, investors, universities and other levels of government.
- SNGs should pursue policy partnerships to unlock capacity for internationalisation, by:
  - Identifying the national players and resources that can enable a more systematic and innovation-focused collaboration agenda.
  - Connecting international collaboration to national strategies, for example: creating more centres of productivity which distribute innovation capacity.
  - Seeking to access personnel and development opportunities operating at a national level with specific international collaboration expertise.

RESEARCH AND DEVELOPMENT

***The Relationship between Public and Private R&D Funding*, published by the Department for Business, Energy & Industrial Strategy, assesses the overall impact of public research and development (R&D) support on levels of private R&D across the economy.**

- Innovation enhances productivity and drives long-run prosperity. It can create new and improved products and processes, and generate cost savings for companies and the taxpayer, as well as numerous other benefits.
- However, a range of market failures mean that if left entirely to the market, the amount of R&D which takes place would be considerably less than optimal. These failures provide a strong case for government intervention to support R&D across the economy.
- For the UK, the report found that each £1 of public R&D stimulates between £0.41 and £0.74 of private R&D within the same year. In the long run, the same £1 of public R&D eventually stimulates between £1.96 and £2.34 of private R&D (inclusive of the impact in the first year).

- Alongside the UK analysis, the report estimated the link between public and private R&D rates for nine other OECD countries. It found a wide variation in the impacts of public R&D on private R&D across countries. The greatest impact was found for Japan, where £1 of public support would stimulate £3.16 of public investment in the long term. In contrast, the same £1 of public support in Spain would encourage just £1.21 of private investment.

SECTORS AND TECHNOLOGIES

***The Fight against COVID-19 Pandemic with 5G Technologies*, published by University College Dublin, discusses how 5G technologies can be utilised to help bring business and personal lives back to what they were pre-pandemic.**

- Presently, countries are putting their strategies into action to return to regular life step by step. However, many countries still have unresolved COVID-19 cases, and report new cases on a daily basis. Therefore, governments must ensure that the "re-opening" underway will not result in a "re-emergence" of COVID-19 disease.
- Digitalization and the application of information and communication technologies will be imperative to not only safeguard, but also to manage the post COVID-19 world. The novel technologies such as Artificial Intelligence (AI), Big Data, 5G communications, cloud computing and blockchain can play a vital role to facilitate the environment fostering protection and improvement of people and economies.
- Online education platforms offered by universities and schools provide the opportunity for students to carry on their education without interruptions. These platforms allow real-time interaction between the students and the teacher using high quality videos to replicate the classroom experience.
- Implementing the proposed solutions requires addressing potential challenges in the areas of security and privacy, scalability, limited connectivity, societal issues, and legal aspects.
- It is firmly believed that involved parties including engineers, technology managers, healthcare workers, government authorities, researchers and the general public at large will be able to fulfil their usual duties and functionalities by banking on the proposed innovative 5G and Internet of Things based solutions.
- However, presently, the lack of widely available 5G communication networks imposes a limitation for the rapid adaption of proposed technologies. In addition, the solutions will require users to change their regular habits, work patterns, tools, etc., and adapt to new ways of thinking and functioning.

***The Role of Blockchain to Fight Against Covid-19*, published by University College Dublin, highlights how emerging technologies, such as blockchain, can be put to the test for the first time during the Covid-19 pandemic.**

- Technological advances are one of the key strengths of the current era that may help to overcome the challenges posed by COVID-19. Novel technologies—such as Artificial Intelligence (AI) & Machine Learning (ML), Internet of Things (IoT), Blockchain, robotics & Unmanned Aerial Vehicles (UAVs), 3D printing, nanotechnology & synthetic biology, 5G communications, cloud & edge computing and Big Data—can be leveraged to develop intelligent emergency management strategies for the COVID-19 pandemic.
- Blockchain provides a decentralized computational service architecture that eradicates most of the limitations associated with centralized computing ecosystems. The blockchain is a collection of computing nodes that are connected in a peer-to-peer (P2P) manner and mutually verify transactions executed within the network. In the blockchain, each block cryptographically seals a set of transactions and is linked with the previous block to form a hash-based (cryptographic) chain of blocks.
- Blockchain can be used in the following ways:
  - Contact Tracing.
  - Disaster Relief and Insurance - Using traditional paper-based procedures to help large number of businesses is going to be time consuming and ineffective. Blockchain with smart contracts can be used to simplify complicated application and approval processes for loans and insurance.
  - Patient Information Sharing - The decentralized storage offered by blockchain could greatly improve the security and privacy of healthcare data.

- Immigration and Emigration Procedures - Blockchain-powered cross-country data sharing platforms can be established to handle immigration and emigration processes in a smarter way.

- However, the paper notes that a variety of challenges, such as legal, security, privacy, latency, scalability and resource utilisation issues must be resolved before blockchain can be fully utilised for these purposes.

ENTREPRENEURSHIP

***The impact of Covid-19 on business activity in Northern Ireland - Summary Report*, published by the Ulster University Economic Policy Centre, identifies the effects and vulnerabilities of firms arising from Covid-19 in terms of the initial lockdown and as economic activity resumes.**

- Business activity remains suppressed with many businesses still trading below normal expectations and cash reserves have been stretched. In addition, an estimated 80k – 85k jobs remain on furlough alongside a significant increase in proposed redundancies being notified to the Department for the Economy. The current annual number of proposed redundancies is now the highest on record.
- Business start-up activity had slowed and the support schemes have most likely postponed some business closures. This is a critical issue as business start-up activity is fundamental to a strong economic recovery.
- The sectors most highly impacted are Accommodation & Food and Arts & Entertainment which were heavily reliant on the furlough scheme over the summer period as restrictions were lifted elsewhere.
- Whilst business support schemes were very welcome, there is recognition that further funding cannot sustain every struggling business and therefore the next phase of public support should be focused on business recovery which requires alternative measures.
- Some policy suggestions have been identified to support medium and longer term recovery:
  - Encouraging entrepreneurship through a discretionary fund to support new business start.
  - Supporting local businesses and social enterprises through government procurement and delivery of public services.
  - Supporting demand more generally.
  - A need to reconsider who and what to tax.
  - Deciding which sectors to support in future.

***Global Entrepreneurship Monitor (GEM) – Entrepreneurship in Ireland 2019*, published by the Department of Business, Enterprise and Innovation, analyses the current entrepreneurship landscape in Ireland.**

- GEM's annual Total Early Stage Entrepreneurs Activity (TEA) Index indicates that the rate of early stage entrepreneurs increased in 2019 by almost 30% year on year.
- The TEA Index consists of two groups of early stage entrepreneurs: nascent entrepreneurs (those planning to start-up or who have paid salaries for less than three months) and new business owners (those who have started a new business since January 2016 and have paid salaries for at least three months).
- The rate of both nascent entrepreneurs and new business owners increased year on year. Ireland is ranked 8th across the OECD in terms of the rate of nascent entrepreneurs and 9th in respect of new business owners.
- Between January 2016 and June 2019, over 127,100 individuals started a business in Ireland. This is the equivalent of an average of just over 3,000 people starting a new business in Ireland every month in 2019. This rate has significantly increased year on year.
- The rate at which women aspire to start a business (15%), while still less than that for men (23%), when expressed as a ratio (1.6:1) bodes well for the future.
- While the results of the latest GEM research show many positives for entrepreneurship in Ireland, the report warns that Covid-19 may bring about negative impacts lasting a number of years. In the aggregate, the effect of Covid-19 is likely to be an increase in exits of established businesses, while nascent entrepreneurs may have to abandon the business ideas they were working on.

BUSINESS GROWTH

***COVID-19 pandemic and SMEs revenues in Ireland: What's the gap?*, published by the Economic and Social Research Institute, assesses the financial impact Covid-19 has had on Irish SMEs.**

- Pre-pandemic, seven-in-ten firms made a profit, a share that is slightly higher amongst small and medium firms relative to micro firms but not substantially so. The percentage of profitable SMEs is slightly lower for the sub-sample of firms which have debt. The ratio of debt-to-turnover is steady across most sectors with the exception of hotels and restaurants where the ratio is considerably higher than average at 42 per cent. The share of firms making a profit is lowest in this sector at 58 per cent and the share of firms that have missed a payment on debts is highest.
- The median firm holds enough cash or equivalent to cover 10 per cent of their annual expenditure. Firms with outstanding debt understandably hold less in cash reserves, at 6 per cent of annual expenditure compared to 18 per cent for firms without debt to be serviced. Micro firms tend to hold greater cash (which may be a reflection of their more limited access to external financing) than small and medium firms.
- The worst affected sector in terms of turnover reduction was in accommodation and food, where the most stringent lockdown restrictions applied. Construction was also particularly heavily affected. For other sectors, the extent of the reduction in turnover was extensive but more varied across the percentage bands with only accommodation and food having all firms lose turnover.
- The report presents three pathways to recovery that SMEs in Ireland may face:
  - Base scenario: Gradual recovery with ongoing public health measures (e.g. physical distancing. - 71 per cent of firms were back at normal turnover levels by Q4.
  - Optimistic scenario: More rapid recovery towards normal turnover levels - 87 per cent were back at normal turnover levels by Q4.
  - Pessimistic scenario: Initial opening up but no further recovery - This results n only 45 per cent of firms being modelled as back to normal turnover levels by Q4.
- However, it is noted that the results are subject to considerable uncertainty, particularly in the case of the forward-looking-scenarios which depend to a large extent on health developments and the control of the pandemic.

GROWTH FINANCE

[No relevant material sourced for this quarter's release.]

BUSINESS REGULATION

[No relevant material sourced for this quarter's release.]

Succeeding Globally

TRADE

***China and the United Kingdom: Economic Relationships*, published by the National Institute of Economic and Social Research, details the economic relationships between China and the UK.**

- China's remarkable growth has transformed the global pattern of world production, trade and investment, and has caused large changes in the industrial structures of North America, Europe (including the UK) and Japan.
- The number of Chinese students at UK universities has more than trebled since 2006, and is now about 115,000, more than from the entire European Union. Their fees are at least £1.7 billion a year. Some 16,000 pupils at UK independent schools are from China and Hong Kong, 28% of the non-UK total. Chinese tourists to the UK spent £1.7 billion in 2019.
- China is more than a massive source of cheap labour. Huawei is a leading producer of 5G network equipment. There is no US producer. Huawei is involved in building the UK's 5G network, but its share is capped at 35%, and Huawei is banned from certain sites. The US is pressing the UK to impose a complete ban, as in the US itself, Australia and New Zealand.

- The report simulates a 'China shock'. It suggests that a sustained 6% fall in demand in China would lead to a 1% impact on UK GDP, perhaps lasting for several years. Simulation of a trade war between the USA and China suggest that the effect on UK GDP would be modest. Restrictions on trade between the UK and China – a possible outcome of the Huawei debate – would depress GDP and put upward pressure on inflation, so that interest rates would increase.

INWARD INVESTMENT

***Spillovers from Inward Investment – a Comparison of Northern Ireland with the rest of the UK*, published by the Enterprise Research Centre, explores the variation in spillovers from inward investment in different parts of the UK.**

- Inward investment is of vital importance to the UK economy. However, the latest data from the Department for International Trade indicates that Northern Ireland gets the smallest share of the total inward investment that comes into the UK (2%), even after allowing for the dominance of London.
- A focus of policymakers is the apparent poor performance of the UK in terms of productivity. In the context of inward investment, this means developing an understanding of where (and why) inward investment can generate productivity growth in the host economy.
- One mechanism of this generation of productivity growth is whether (and how) the presence of inward investment generates productivity growth in the wider economy, typically explained in terms of a range of effects that have come to be labelled as "FDI spillovers"
- The term "spillovers" means any positive benefit of an activity that is not captured through the market mechanism. Though typically it is common to see these expressed in terms of productivity (growth), in the context of inward investment they are also commonly expressed in terms of innovation, or even in terms of wage effects.
- In productivity terms, Northern Ireland benefits more from inward investment than any other part of the UK. The magnitude of this effect suggests that if the stock of FDI in Northern Ireland was to double, that would on average add just under 9% to average productivity of the domestic sector in Northern Ireland.
- The results highlight the potential benefits accrued to Northern Ireland of attracting FDI, and that while the volume of FDI it attracts is low, the returns in terms of productivity are significant. It is therefore clear that the attraction of inward investment is an important element of Northern Ireland's industrial strategy.

TOURISM

[No relevant material sourced for this quarter's release.]

Economic Infrastructure

ENERGY

***Future of Renewables in Northern Ireland*, published by the Department for the Economy, gives consideration to renewable electricity and possible future policy in Northern Ireland.**

- Northern Ireland is on track to meet its 2020 targets with regards to electricity consumption from renewable energy sources, which were set at 40%. The Department for the Economy published statistics in 2019 indicating that over a 12 month period between July 2018 and June 2019, 44.0% of electricity consumption came from renewable sources - exceeding the target of 40%.
- The report provides extensive research on the outcomes of past policy, the current landscape of electricity in Northern Ireland and feedback from various stakeholders including national and local government, regulators, industry bodies and non-government organisations.
- The key messages for policy makers to consider when choosing the appropriate renewable electricity targets are:
    - From a purely cost perspective without subsidy support, onshore wind is the most likely technology to be deployed. In the absence of any support it is questionable whether onshore wind would meet either a 55% or a 70% renewable energy target.

- Without development of new generation assets in the 2020s, Northern Ireland could begin facing serious security of supply issues towards 2030 and beyond.
- Diversity of technology is an important consideration from the perspective of both grid capacity and potentially for security of supply. Large amounts of intermittent generation such as wind and solar can create issues for the grid and increase curtailment costs.
- The ambition of renewable energy targets will have a material impact on the cost and extent of electricity grid build-out with forecast investment of between £388m and £672m.
- The biggest and most pressing challenge from a grid infrastructure perspective will likely be the development and construction of large-scale transmission projects located primarily in the north and west of the region where remaining connection capacity is severely limited.
- Therefore, strong consideration should be given to formally identifying and advancing key strategic grid projects at transmission and distribution network levels to ensure that there is sufficient capacity available for projects to connect in a timely manner to meet the chosen 2030 targets.

TELECOMS

[No relevant material sourced for this quarter's release.]

AIR ACCESS

[No relevant material sourced for this quarter's release.]

Government

NORTHERN IRELAND

***The Impact of Covid-19 on the NI Economy: Modelled Results for Q2 2020*, published by the Department for the Economy, examines the potential impact of the coronavirus pandemic on the Northern Ireland economy.**

- The paper uses detailed gross domestic product figures to model potential sectoral and sub-regional effects of the coronavirus pandemic on the Northern Ireland economy.
- The overall results suggest that Northern Ireland is likely to see a more severe economic impact than the UK average, with Q1 2020 gross domestic product (GDP) growth of -2.5% expected (against a UK average of -2.2%), and Q2 2020 GDP growth of -20.8% against a UK average of -20.4%.
- The Agriculture sector is modelled as having -5.7% growth in Northern Ireland for Q2 2020, versus -4.8% for the UK average. This is due to the relative size of the fishing and aquaculture industry in Northern Ireland, which has been hit harder than agriculture or forestry.
- The most impacted regions in Northern Ireland during Q2 2020 were Antrim & Newtownabbey (-23% GDP growth) and Newry, Mourne & Down (-21.9%). Unsurprisingly, with the high level of specialisation in Information and Communication, and Financial Services, Belfast is most insulated from the impact of GDP falls (-19.7%).
- The paper notes that these results are modelled, and may differ from published Northern Ireland Composite Economic Index for Q2 2020, which will have actual outturn data from businesses in NI to draw upon.

ENGLAND

[No relevant material sourced for this quarter's release.]

SCOTLAND

[No relevant material sourced for this quarter's release.]

WALES

[No relevant material sourced for this quarter's release.]

REPUBLIC OF IRELAND (ROI)

[No relevant material sourced for this quarter's release.]

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